Ordnance Demolition Area (ODA)
Proposed Plan &
Public Meeting

PRR National Wildlife Visitor Center
Thursday, April 28, 2011, 6:30-8:30pm

Sponsored By: U.S. Army

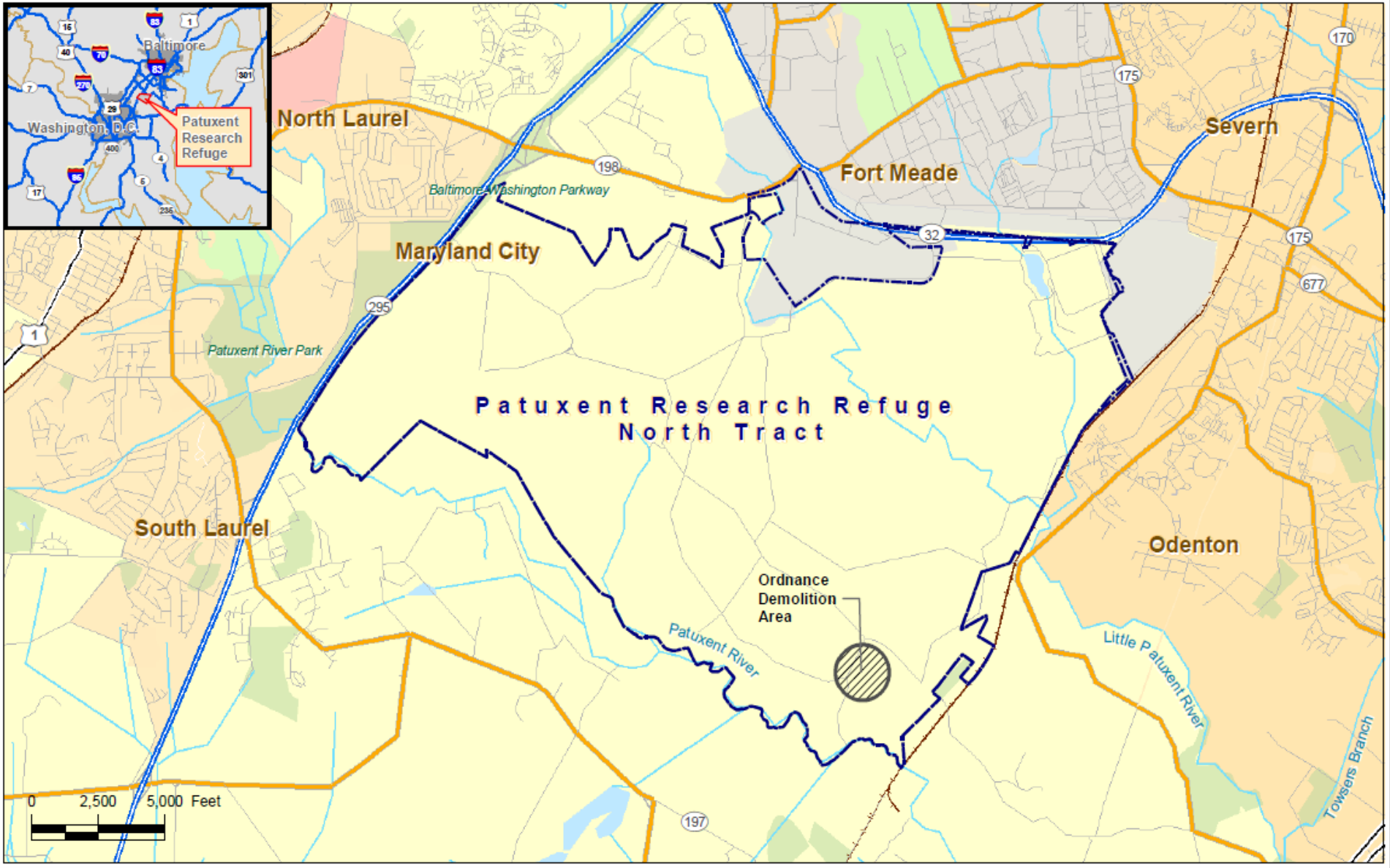
In Coordination with
U.S. Environmental Protection Agency (EPA),
Maryland Department of the Environment (MDE),
U.S. Fish and Wildlife Service (FWS), and
Patuxent Research Refuge (PRR)

Ordnance Demolition Area (ODA) Public Meeting

- Purpose of this Public Meeting…
  - Provide information regarding the ODA
  - Welcome feedback on the cleanup remedy selection for the ODA
  - Address any concerns or issues regarding the Proposed Plan and the Remedial Alternatives

Background

- ODA is a Legacy Base Realignment and Closure (BRAC) Program and Former Fort George G. Meade Site
- ODA is located within Patuxent Research Refuge – North Tract (PRR-NT)
- U.S. Army is leading the environmental restoration activities at this site
  - Congressional mandate to transfer the ODA to FWS as a wildlife sanctuary.
  - 2009 Federal Facility Agreement (FFA) that drives the cleanup of BRAC Sites.



CLIENT	U.S. Army Corps of Engineers, Baltimore District			
DATA SOURCE	ESRI Street Maps 9.2; ODA Long-Term Monitoring 2010 Sampling Event			
REVISION NO	0	GIS:	RP	08/25/09
SCALE	1:60,000	CHECKED:	FM	07/29/08
G:\Projects\Fort_Meade\ODA\Projects\ODAinsetandFigure2-1_2009.mxd		PROJ MGR	FM	-

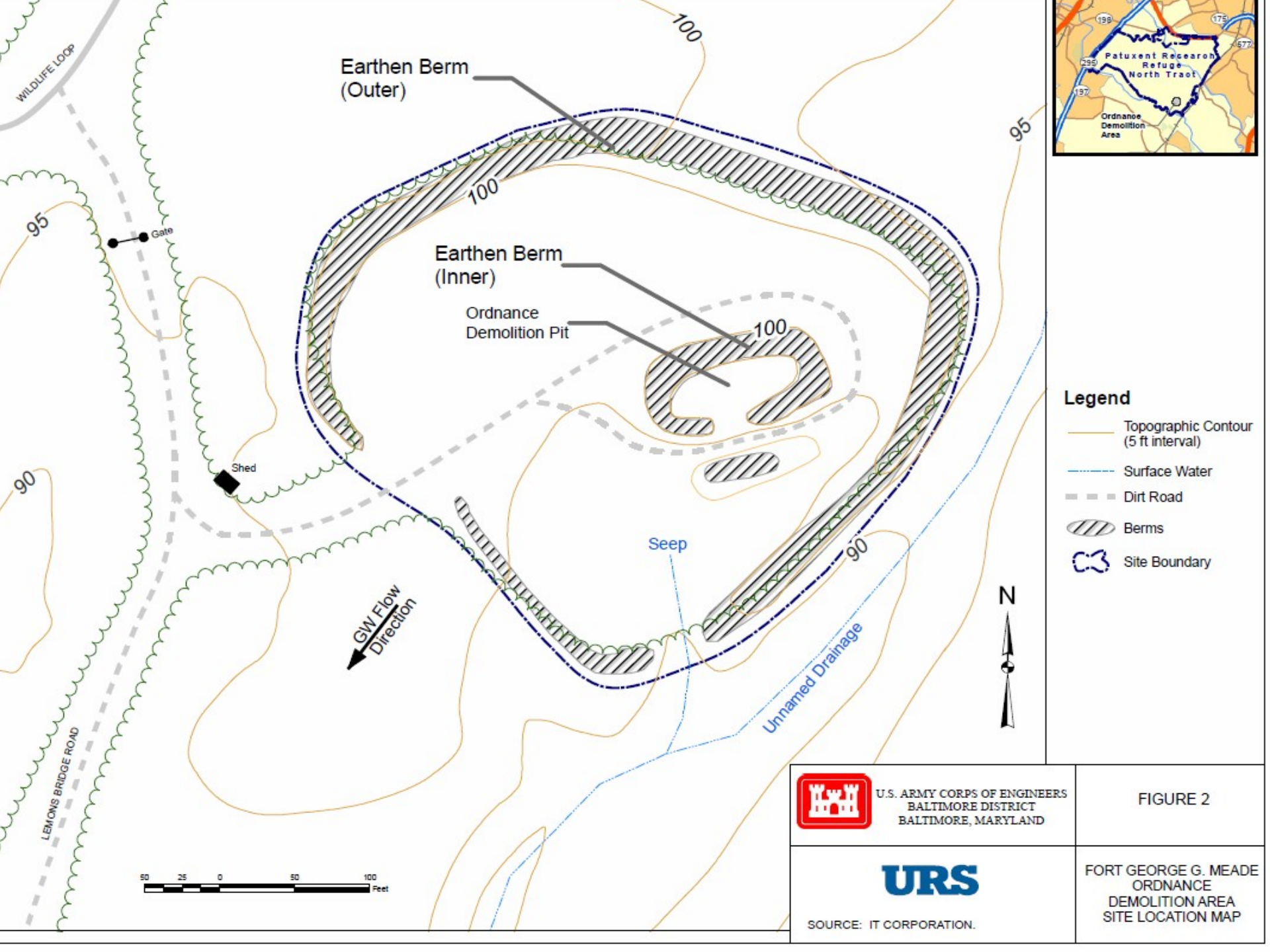
TITLE

Vicinity Map
Patuxent Research Refuge - North Tract

URS
200 Orchard Ridge Drive
Gaithersburg, MD 20878

PROJ NO 15302389.30000

FIGURE 1



U.S. ARMY CORPS OF ENGINEERS
BALTIMORE DISTRICT
BALTIMORE, MARYLAND

FIGURE 2

URS

SOURCE: IT CORPORATION.

FORT GEORGE G. MEADE
ORDNANCE
DEMOLITION AREA
SITE LOCATION MAP

Site History

- The ODA is inactive; years of operation are unknown.
- Used for demolition of known and potential unexploded ordnance (UXO) from Fort Meade and the PRR-NT parcel.
- Possibly used for demilitarization of obsolete and out-of-date training rounds.
- Demolition occurred within the pit area

Site Features

- Inner and Outer Berms were safety features to reduce hazards from ejected debris.
  - Inner Berm is 40 by 80 feet and mostly filled with sand.
  - Inner Berm rises approximately 8 feet and is constructed of rubble and earthen material.
  - Outer Berm is similarly constructed earthwork.
- Area between the berms varies (50 to 200 feet) and is flat and covered with grass.

Site Contamination

- Munitions and Explosives of Concern (MEC) are potentially present in the subsurface at the ODA.
- Fort George G. Meade conducted artillery and munitions training exercises in the area.
- 1995 Ordnance Sweep Survey was conducted at the Site to a depth of 6 inches.

Site Contamination (Cont.)

- Army has implemented the following measures to address MEC:
  - Land Use Controls (LUCs) to prohibit any excavation or disturbance of surface or subsurface soils without MEC support.
  - UXO Education Program at the PRR-NT to
    - Increase awareness of the MEC hazards,
    - Provide examples of how MEC may appear, and
    - Advise people what to do if suspected MEC is encountered.

Site Contamination (Cont.)

- In 2002, Remedial Investigation (RI) activities found the following:
  - **SOILS**: detections of volatile organic compounds (VOCs), explosives, and metals.
  - **SURFACE WATER AND SEDIMENT**: detections of metals in the intermittent seep.
- Risk assessment results indicate that no adverse health effects are likely to occur from exposure to these media.

Site Contamination (Cont.)

- The 2002 RI activities continued:
  - **GROUNDWATER:** detections of VOCs, explosives, and metals.
- Human health risk assessment (HHRA) states:
  - Consumption of groundwater is not a complete exposure pathway
  - LUCs prohibit the use of groundwater at the site
  - Current/future land use is to remain as a wildlife refuge
  - EPA evaluated residential exposure to groundwater
  - Preliminary remediation goals (PRGs) were derived

Site Contamination (Cont.)

- **Acceptable cancer risk range is 10^{-4} to 10^{-6}**
  - One additional chance in 10 thousand (1×10^{-4}) to one additional chance in 1 million (1×10^{-6}) that a person will develop cancer if exposed to contaminants at a Site. Do not exceed threshold is 10^{-4}.
- **Hazard index (HI) threshold is 1**
  - The probability associated with developing non-carcinogenic adverse health effects is expressed as a ratio of the existing level of exposure to contaminants at a Site to an acceptable level of exposure. At or below an HI of 1, adverse effects are not expected.

USACE and USEPA Human Health Risk Assessments Summary

Receptor	Exposure Medium	Cancer Risk	Non-Cancer Hazard
USACE HHRA RESULTS			
Current Recreational User [1]	Surface Soil	8.1×10^{-6}	0.025
	Surface Water	2.1×10^{-8}	0.0004
	Sediment	1.1×10^{-6}	0.006
	Cumulative Totals	**9.2×10^{-6}**	**0.03**
Future Recreational User [1]	Surface Soil	8.1×10^{-6}	0.025
	Sediment	1.1×10^{-6}	0.006
	Surface Water	1.4×10^{-5}	0.09
	Cumulative Totals	**2.3×10^{-5}**	**0.12**
Future Construction Worker	Mixed Soils	1.3×10^{-7}	0.013
	Cumulative Totals	**1.3×10^{-7}**	**0.013**
2002 USEPA HHRA RESULTS			
Adult Resident	Unrestricted Groundwater	--	11
Child Resident	Unrestricted Groundwater	--	21
Lifetime Resident	Unrestricted Groundwater	8×10^{-4}	--
2008 USEPA HHRA RESULTS [2]			
Adult Resident	Unrestricted Groundwater	--	0.4
Child Resident	Unrestricted Groundwater	--	0.9
Lifetime Resident	Unrestricted Groundwater	2×10^{-4}	--

(1) The recreational user represents an adult scenario only; the ODA does not have any recreational attractions (e.g., shelters, campgrounds, playgrounds, etc.) that would tend to attract children. The receptor spends 30 days per year visiting the site over the course of 30 years.

(2) In 2008, USEPA updated the residential exposure to groundwater HHRA results using updated toxicity data and 2006 groundwater data.

Preliminary Remediation Goals (PRGs)

Groundwater Contaminant	2010 Highest Detected Level (µg/L)	PRG (µg/L)	Drinking Water Standard
Cadmium	2	5	Yes, MCL
Trichloroethene	1.6	5	Yes, MCL
Tetrachloroethene	14	5	Yes, MCL
246-TNT	Not detected	3.4	Risk-based level
2A46-DNT	0.48	0.8	Risk-based level
4A26-DNT	0.57	0.8	Risk-based level
RDX	16	20	Risk-based level
Chloroform	Not detected	2	Risk-based level

MCL = Maximum Contaminant Level
minary Remediation Goal

DNT = Dinitrotoluene
RDX = Royal demolition explosive
TNT = Trinitrotoluene

ARMY STRONG.

Remedial Alternative Evaluation

- Focused Feasibility Study (FFS) accomplished the following:
  - Potential remedial measures were evaluated to address ODA contamination and to achieve PRGs
  - Five remedial alternatives were evaluated using EPA's Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) criteria.
  - A Preferred Alternative was selected.

Remedial Alternatives

- Alternative 1: No Action
- Alternative 2: Land Use Controls (LUCs)
- Alternative 3: Monitored Natural Attenuation (MNA) with LUCs
- Alternative 4: Enhanced Anaerobic Bioremediation (EAB) with LUCs
- Alternative 5: Pump and Treat with LUCs

Preferred Alternative = Alternative 3

CERCLA CRITERIA EVALUATION OF THE ALTERNATIVES

Evaluation Criteria	Alternative 1 No Action	Alternative 2 LUCs	Alternative 3 MNA with LUCs	Alternative 4 EAB with LUCs	Alternative 5 Pump & Treat with LUCs
THRESHOLD CRITERIA					
Overall Protection of Human Health and the Environment	NA[(b)]	NA[(b)]	3	4	4
Compliance with ARARs	NA[(b)]	NA[(b)]	4[(b)]	4	4
PRIMARY BALANCING CRITERIA					
Long-Term Effectiveness and Permanence	1	2	3	3[(b)]	4
Reduction of Toxicity, Mobility, and Volume Through Treatment[(a)]	1	1	3[(b)]	3[(b)]	4
Short-Term Effectiveness	1	2	3	4	4
Implementability	4	4	4	2	2
Cost	4	4	4	2	1
TOTAL SCORE:	**Not Evaluated[(b)]**	**Not Evaluated[(b)]**	**24**	**22**	**23**

Notes:

ARARs = Applicable or Relevant and Appropriate Requirements; EAB = Enhanced Anaerobic Bioremediation; LUCs = Land Use Controls
MNA = Monitored Natural Attenuation; NA = Not Applicable

(a) EPA Region III does not consider MNA (Alternative 3) to be "treatment" for purposes of satisfying this criterion.

(b) Rating/score was changed from the original 2002 FFS evaluation because of Draft Proposed Plan comments and the trend results available from the 2003-2010 LTM program

Relative Rating/Score:

Excellent = 4
Good = 3
Adequate = 2
Poor = 1

Preferred Alternative

- Annual long-term groundwater monitoring for MNA parameters, VOCs, explosives, and metals.
- Enforce and maintain groundwater and MEC LUCs to prohibit the following:
  - Any unauthorized extraction or use of the groundwater,
  - Residential use of the Site,
  - Unauthorized excavation of soils without MEC support.

Preferred Alternative LUCs

- Army will submit a Land Use Control Implementation Plan (LUCIP) to stakeholders.
- LUCIP is an agreement that formalizes the roles and responsibilities of federal and state environmental regulators, local government officials, and private stakeholders in the long-term administration and management of LUCs at Site.

ODA Proposed Plan Comments

- Please provide comments at this meeting or by mail (postmarked no later than April 30, 2011):

  Department of the Army
  Corps of Engineers, Baltimore District
  Attn: CENAB-EN-HM (Andrea Graham)
  10 South Howard Street
  Baltimore, MD 21201
  Phone: (443) 986-3444

ODA Proposed Plan
Comments or More Information…

Environmental Management Division
Attn: IMND-MEA-PWE
2212 Chisholm Ave, Suite 5115
Fort Meade, MD 20755
Phone: (301) 677-9648
Hours: Monday – Friday, 7:30 a.m. to 4 p.m.

Fort Meade Environmental Management System Website:
www.fortmeade-ems.org

ODA Proposed Plan
Regulatory Contacts

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Ordnance Demolition Area (ODA) Public Meeting Conclusion

- The Army wishes to thank the following:
  - Public, EPA, MDE,
  - FWS, USACE, and PRR
- Thank you for participating in tonight's meeting.
- Thank you for your support and feedback with this important review process.